USGS: Organizing, Preserving, and Communicating Knowledge of the Natural World

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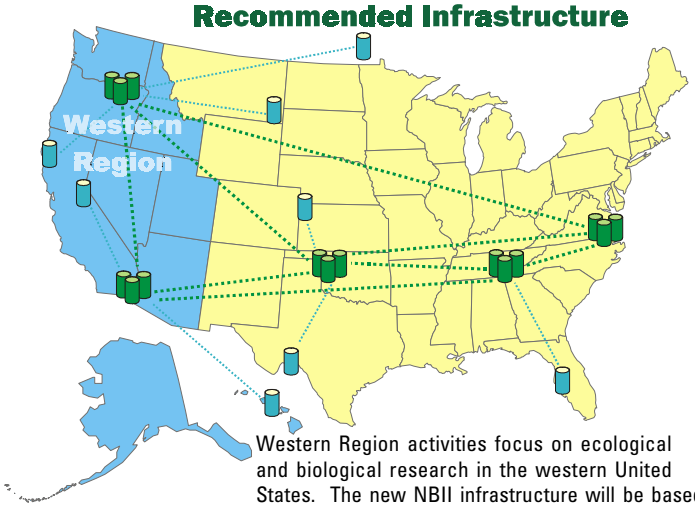

Western Region activities focus on ecological and biological research in the western United States. The new NBII infrastructure will be based at regional sites, with initial locations in the Pacific Northwest and the southern Appalachian region. There will also be a thematic node in Hawaii. Improved NBII capabilities will be made possible by innovations in hardware, software, and telecommunications.

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Two USGS initiatives in the FY2000 budget will make access to this information easier and more efficient by taking advantage of modern information tools and technologies. The National Spatial Data Infrastructure (NSDI)-Community/Federal Information Partnerships (C/FIP) ($3 million for biological information) and the National Biological Information Infrastructure (NBII) ($1 million) are streamlining information access, storage, and retrieval. The NSDI-C/FIP offers geographic information, such as the spread of invasive species within the United States. The NBII is an Internet-based effort the USGS coordinates that provides access to a wealth of information on the nation's biological resources.

In the Western Region (shown above), activities already underway that can benefit from these initiatives include work aimed at providing information on the forests of western Oregon, plants of California, Alaska landbirds, Pacific Northwest salmon, and Hawaiian invasive species.

Forests

USGS is launching the Cooperative Forest Ecosystem Research (CFER) program, a 10-year program to study plants, animals, and their habitats on federal forested lands in western Oregon. CFER provides forest managers with new information to evaluate current and proposed strategies and practices associated with the management of forest ecosystems, and facilitates the development of improved, sustainable forest practices. The Pacific Northwest has an enormous diversity of plant and animal life and habitats. Our studies of these communities — especially in young forests and streamside areas — will help forest managers make wise, informed decisions about these valuable natural resources. USGS will coordinate CFER, working in partnership with state and federal researchers and resource managers.

CalFlora

CalFlora is a web-based clearinghouse and the primary source of electronic data and information on plant distributions and occurrences within California. It provides access to data on plant habitat and is a major tool for identifying conservation and monitoring priorities. CalFlora is currently being used to support state and federal organizations, such as the California Department of Transportation, the California Department of Fish and Game, and the U.S. Forest Service.

USGS is expanding the CalFlora system to make the database accessible through the NBII. The central goal of

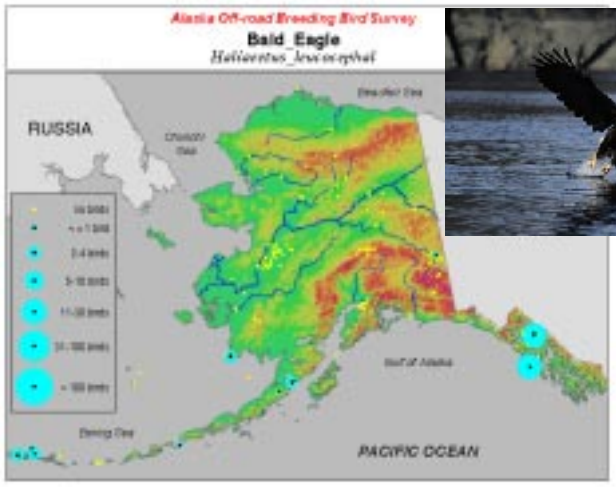
photo by Brother Eric Vogel

The smokey mariposa, a wildflower that is native to California, is commonly found at elevations between 4,000 and 11,000 feet.

this expansion is to further develop CalFlora as a public information resource and a data source for research on plant biodiversity, ecology, and conservation. Improvements include enlarging the "library" of data available for research and management applications, improving the overall quality of plant distribution data, upgrading links with other electronic data sources, increasing the number of plant data libraries, and enhancing tools for the analysis and integration of different data sets.

Alaska Landbirds

Alaska's habitats support 130 species of breeding landbirds. Many of these species have suffered significant population declines. Recent large-scale disturbances, such as those caused by man as well as the spruce beetle epidemic, threaten vast tracks of landbird breeding habitats. To aid state and federal land managers in understanding and managing the effects of these changes, USGS is expanding its existing Alaska Landbird Resource Information System by compiling, analyzing, and computerizing data on habitat structure collected from across the state. These habitat data represent the best information available on the distribution of breeding landbirds in relation to habitat structure across Alaska. Habitat data will complement existing data on the composition and abundance of bird communities. The searchable Alaska Landbird Habitat database will be available for scientists, resource managers, and the public through the NBII.



Historically, the bald eagle ranged throughout North America . . . except extreme northern Alaska and Canada, and central and southern Mexico.

Salmon Information

Salmon are in serious decline in the Pacific Northwest. USGS salmon research provides scientific information focused on a variety of topics, including reproduction, survival, and health; developing and evaluating methods for restoring and managing populations; and determining salmon distribution.

USGS has long been an important provider of scientific assistance to agencies and organizations responsible for the management of salmon in the Pacific Northwest. Through the NSDI-C/FIP, information from partnerships with agencies, organizations, and tribes involved with salmon restoration will be made electronically available.

The main threats to salmon are pollution, overfishing, and habitat destruction.

Hawaiian Invasive Alien Species Information

With funding available from the NSDI-C/FIP, USGS is in a prime position to develop a thematic node for the NBII that serves Hawaii and other Pacific Islands. The goal of this effort is to create an infrastructure for the collection, synthesis, archiving, and distribution of data sets on Invasive Alien Species (IAS), potentially impacted native species, and ecosystems.

The Hawaii NBII thematic node will make biological and related information (including both point and spatial information) available to collaborating management and research agencies and organizations (federal, state, and private) in and out-of-state, and to the general public. Particular focus will be placed on data relating to IAS that have negative effects on Hawaii's economy, agriculture, quality of life, and native species. Information available through the node center will include such topics as IAS identification, biology, control, and monitoring techniques.

NBII

Improvements to the NBII include adding vast amounts of information and strengthening the network through which it is available. For the NBII, funding will be used to build powerful, state-of-the-art information systems that will help users find, analyze, and apply the biological data and information they need. These efforts will include the construction of a national five-node, high-speed backbone network, life-cycle management of biological information, and the development of analytical and visualization tools. The seamless connectivity of the nodes will ensure the greatest access to biological information by a variety of customers and clients, including public individuals, private and educational institutions, program managers, and government researchers.

For More Information

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